Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of scheduling schedulable components in a hard real time system for processing time dependent streams of data elements, where the number of schedulable components is larger than the number of available processors for processing said schedulable components and where each of said schedulable components has at least one input and one output, the method comprising:

identifying possible paths of each schedulable component that the data elements have to be processed to reach an output of said system from each said schedulable component, wherein at least one of the possible paths includes a plurality of schedulable components, and wherein an output of one of the plurality of schedulable components depends on an output of another of the plurality of schedulable components;

determining for each schedulable component the earliest time on which said schedulable component can contribute to the output of said ~~hard real time~~ system,

scheduling only the schedulable component that can contribute at the total earliest time to the output of said real time system.

2. (Currently amended) The method according to claim 1, wherein if a number of schedulable components contribute to the output of said real time system at the same total earliest time, then scheduling of said number of schedulable components is performed using push scheduling.

3. (Currently amended) The method according to claim 1, further including determining a predefined time interval for each schedulable component, each predefined time interval having a length, and wherein a schedulable component is schedulable when time stamped data elements from said time dependent stream for a corresponding predefined time interval are available to said schedulable component.

4. (Currently amended) The method according to claim 3, wherein said predefined time interval is determined by defining a begin time and an end time , and further including determining when data being processed by a preceding schedulable component is processed before the end time of said predefined time interval.

5. (Currently amended) The method according to claim 4 wherein determining the earliest time on which said component can contribute to the output is performed by:

~~identifying possible paths of subsequent components that the data elements have to be processed by in order to reach the output of said system from said component,~~

determining an earliest contribution time for each possible path by subtracting from the begin time of said predefined time interval the length of each of the predefined time intervals specified for each of said subsequent schedulable components in said path; and

determining the earliest time on which said schedulable component can contribute to the output as the earliest determined contribution time.

6. (Currently amended) The method according to claim 4, wherein determining the earliest time on which said schedulable component can contribute to the output is performed by:

identifying a path of subsequent schedulable components that the data elements have to be processed by in order to reach the output of said system from said schedulable component,

determining an earliest contribution time for each possible path by subtracting from the begin time of said predefined time interval, the length of each of the predefined time intervals specified for each of said subsequent schedulable components in said path, where at least some of said predefined time intervals have been shortened by a displacement value; and

determining the earliest time on which said schedulable component can contribute to the output as the earliest determined contribution time.

7. (Previously presented) The method of claim 1, wherein none of the other schedulable components are scheduled until after the scheduled schedulable component is processed and contributes to the output of the real time system.

8. (Currently amended) A system, comprising:

a processor device configured to:

identifying possible paths of each schedulable component that have to be processed to reach an output of said system from each said schedulable component, wherein at least one of the possible paths includes a plurality of schedulable components, and wherein an output of one of the plurality of schedulable components depends on an output of another of the plurality of schedulable components;

determine an execution time, for each of a plurality of schedulable components, at which an output of each schedulable component is able to be processed by the system, wherein a component is schedulable only if the component has processed all data elements with time stamps in a corresponding processing time interval; and

schedule processing of the output of only one of the schedulable components by the system based on the execution times of the plurality of schedulable components, wherein only a schedulable component that can contribute at a total earliest time to the output of said system is scheduled.

9. (Previously presented) The system of claim 8, wherein the component is not schedulable if the component has not processed all of the data elements with time stamps in the corresponding processing time interval.

10. (Canceled)

11. (Previously presented) The system of claim 8, wherein push scheduling is employed when two of the plurality of schedulable components have the earliest execution time.

12. (Previously presented) The system of claim 8, wherein the data elements are from a data stream.

13. (Previously presented) The system of claim 8, wherein the processing time interval is a predefined time box with a start time and an end time.

14. (Previously presented) The system of claim 8, wherein the data elements are produced by a preceding component.

15. (Previously presented) The system of claim 8, wherein the schedulable component is a self-contained part of the system, performing a sub-task that is atomic.

16. (Previously presented) The system of claim 8, wherein the system is a hard real time system for processing time dependent streams of data elements.

17. (Previously presented) The system of claim 8, wherein the execution time is based on algorithmic time and is converted to real time once the output is processed.

18. (Currently amended) A method, comprising:

defining a current time box for each of a plurality of components, wherein each current time box has a start time and an end time, and each component processes data elements in at least one corresponding current time box;

identifying possible paths of each of the plurality of components that the data elements have to be processed by in order to reach an output of a system from each of the plurality of components, wherein at least one of the possible paths includes a

plurality of components, and wherein an output of one of the plurality of components depends on an output of another of the plurality of components; and

scheduling a first of the plurality of the components for execution when all data elements with time stamps in the first component's current time box are present, wherein all of the data elements for the first component are present in the first component's current time box before all data elements for another one of the plurality of components are present in a corresponding current time box, and wherein only a schedulable component that can contribute at a total earliest time to ~~an~~ the output of said system is scheduled.

19. (Previously presented) The method of claim 18, wherein the data elements are from a stream of data elements in which each data element in the stream is time stamped.

20. (Previously presented) The method of claim 1, wherein each of the schedulable components has a corresponding earliest time at which it can contribute to the output of the real time system, and

wherein the total earliest time is an earliest of the earliest times of the schedulable components.